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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09,520,609	03-07-2000	Hisashi Nagata	1035-254	9252

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 06-05-2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/520,609

Applicant(s)

NAGATA ET AL.

Examiner

Thoi V Duong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,31 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,31 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(a) or (b) or (c) or (d).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statements (PTO-1449) Paper No(s) _____ 6) ☐ Other _____

DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 11, filed March 20, 2003.

Accordingly, claim 34 was amended. Currently, claims 1-8, 31 and 34 are pending in this application.

Applicant's arguments with respect to claims 1-8, 31 and 34 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ban et al. (USPN 6,175,393 B1).

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The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As shown in Figs. 2 and 3, Ban et al. discloses an active matrix substrate, comprising:

- a pixel electrode 4 provided for each pixel constituted by a scanning line 1 and a signal line 2, 11 that are disposed in a matrix as a whole;

- a switching element 6 located near a point where the scanning line crosses the signal line, so as to be connected to the scanning line, the signal line, and the pixel electrode;

- a storage capacitor electrode 10 for constituting a storage capacitor with the pixel electrode therebetween; and

- a storage capacitor common wire 5 disposed parallel to the signal line, wherein the signal line, the storage capacitor electrode, and the storage capacitor common wire are fabricated from a single electrode layer through patterning thereof (col. 8, lines 26-44),

- wherein the storage capacitor electrode is a transparent electrode film (col. 9, lines 40-45)

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. (USPN 6,175,393 B1) in view of Ishida et al. (USPN 6,215,154 B1).

As shown in Figs. 2 and 3, Ban et al. further discloses that the pixel electrode 4 is disposed opposing the storage capacitor electrode 10 through a contact hole 4b and connected to the switching element through a contact hole 4a and the storage capacitor common wire 5 is narrower than the storage capacitor electrode 10.

Ban et al. discloses an active matrix substrate that is basically the same as that recited in claims 5-8 except for an interlayer insulation film provided on the insulation film. As shown in Fig. 5, Ishida et al. discloses an active matrix substrate comprising a TFT 206, a storage electrode 85, a pixel electrode 74, an insulation film 88 which includes a first silicon oxide film 86 and a second silicon nitride film 87 (col. 7, lines 46-49). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Ban et al. with the teaching of Ishida et al. by forming an insulating layer having two layers so as to prevent ion from migrating to the TFT.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. (USPN 6,175,393) in view of Ono et al. (USPN 5,760,854).

Ban et al. discloses an active matrix substrate that is basically the same as that recited in claim 4 except that the signal line, the storage capacitor common wire, and the storage capacitor electrode are not structured so as to include two deposited layers each constituted by either a transparent electrode film or a metal film. As shown in Fig. 1, Ono et al. discloses an active matrix substrate comprising a data line DL composed of a laminated film comprising a first conductive layer d1 and a second conductive layer d2. Ono also discloses that the first conductive layer is formed of chromium and the second conductive layer is formed of transparent conductive film ITO (col. 9, lines 33-45). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Ban et al. with the teaching of Ono et al. by forming the signal line, the storage capacitor common wire, and the storage capacitor electrode of a laminated film composed of two deposited layers each constituted by either a transparent electrode film or a metal film to prevent line breakage and improve transmissivity for the display.

7. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. (USPN 6,175,393) in view of Jeromin et al. (8.4: Application of a-Si Active-Matrix Technology in a X-Ray Detector Panel).

Ban et al. discloses an active matrix substrate that is basically the same as that recited in claim 34 except for an image sensor comprising a conversion section for converting incident magnetoelectric radiation to electric charges and bias voltage application means for causing a storage capacitor to store the electric charges. In "Application of a-Si Active-Matrix Technology in a X-Ray Detector Panel" cited by

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Applicant, Jeromin discloses an active matrix substrate used in X-ray detector panel comprising amorphous selenium which converts x-ray photons into charge carrier pairs. Jeromin also discloses that the positive charges are collected in the storage capacitors of the pixels and are then read out charge amplifiers connected to the source lines (see Abstract). Accordingly, a conversion section for converting incident magnetoelectric radiation to electric charges and bias voltage applicator for causing a storage capacitor to store the electric charges are to be employed in the X-Ray detector panel. Thus, with the teaching of Jeromin, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Ban et al. for using in an image sensor comprising a conversion section for converting incident magnetoelectric radiation to electric charges and bias voltage applicator for causing a storage capacitor to store the electric charges.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

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